

CLAIM 1

A method of parallel processing in a memory structure comprising

creating a first thread in the memory structure which represents an independent flow of control managed by a program structure,

said first thread having two states, a first state processing work for the program structure and a second state undispatched awaiting work to process;

providing a second thread in the memory structure which represents an independent flow of control managed by a program structure separate from the first thread;

using the second thread to prepare work for the first thread to process;

placing the work prepared by the second thread in a queue for processing by the first thread;

ORIGINAL DISCLOSURE

"parallel programming" p.1, Ex. A; "new paradigm for the use of threads in a parallel environment" p.2, Ex. A.

"Threads are data objects." p.2, Ex. A; "The invention implements an abstract data object which has a first thread waiting on it." p.2, Ex. A; "Create Thread (in a bottle)" Ex. B.

"When desired, the software [second thread] assigns particular work to the data object, which the waiting [first] thread then wakes up and does. After performing the work, the [first] thread again waits for more work." p.2, Ex. A;

"escapement (work, fcn)" Ex. B.

"When desired, the software [second thread] assigns particular work to the data object, which the waiting thread then wakes up and does." p.2, Ex. A;
In the second thread "escapement" flow chart, the steps "Inject data." Ex. B.

"When desired, the software [second thread] assigns particular work to the data object, which the waiting thread then wakes up and does." p.2, Ex. A;
In the second thread "escapement" flow chart, the steps "Unlock bottle [first thread] Wait for escapement [second thread] release." Ex. B.

if the first thread is awaiting work to process when the work prepared by the second thread is placed in the queue, dispatching the first thread and using it to process the work in the queue;

"When desired, the software [second thread] assigns particular work to the data object, which the waiting thread then wakes up and does." p.2, Ex. A;
In the first thread "Thread (in a bottle)" flow chart, the steps "Lock 'waiting for results' Load data Release escapement [second thread] Work on data Unlock 'waiting for results'." Ex B.

if the first thread is processing other work when the work prepared by the second thread is placed in the queue, using the first thread to complete processing of the other work, access the work in the queue, and then process the work in the queue; and

"After performing the work, the [first] thread again waits for more work." p.2, Ex. A;
"Threads are created once and reused as needed." p.2, Ex. A;
In the first thread "Thread (in a bottle)" flow chart, the steps "Lock 'waiting for results' Load data Release escapement [second thread] Work on data Unlock 'waiting for results'." Ex B.

using the program structure to destroy the first thread in the memory structure after the first thread completes a desired amount of work.

"Threads are created once and reused as needed." p.2, Ex. A; "The [first] thread is not destroyed until the application program decides to do so." p.2, Ex. A.

As stated in paragraph 9 of the inventors' second declaration, they also reduced to practice the invention described in the disclosure and drawing of Exhibits A and B, respectively, in the United States prior to September 29, 1999. This reduction to practice was a "working implementation" for a "compiler product" as noted on page 3 of Exhibit A. The reduction to practice implemented all of the steps and limitations described in claim 1 of the subject patent application.

In addition to the reduction to practice, due diligence from a time before the date of the Sievert reference, September 29, 1999, until the constructive reduction to practice of the invention, its June 20, 2000 filing date, is established by the enclosed declarations, as

well as by the inventors' declaration dated May 10, 2005 submitted with applicants' previous amendment of May 16, 2005 (the "Inventors' May 10, 2005 Declaration"). The activities establishing such diligence are stated in these declarations were follows:

1. The disclosure and drawing of Exhibits A and B, respectively, were created and submitted to IBM's patent attorneys prior to September 29, 1999. Anderson Declaration, ¶ 3; Inventors' October 19, 2005 Declaration ¶¶ 3, 4 and 7; Inventors' May 10, 2005 Declaration ¶¶ 3, 4 and 7.

2. Prior to September 29, 1999, Jay Anderson, the IBM patent attorney responsible for the subject patent application, ordered a search to be made to determine the patentability of the invention disclosed in the invention disclosure attached as Exhibit A and Exhibit B. The results of the search were received by early November of 1999. Anderson Declaration, ¶ 4.

3. After reviewing the aforementioned search results, Mr. Anderson sent a communication to the inventors on November 11, 1999 reporting the results of the search, and requesting comments by them on the search results. Anderson Declaration, ¶ 5; Inventors' October 19, 2005 Declaration ¶ 8.

4. After receiving a response from the inventors concerning the search report, it was decided in or about December of 1999 to file a patent application on the invention disclosure. Because of his backlog of patent application preparation, prosecution and other matters, Mr. Anderson determined that he would send the to outside counsel to prepare the application for filing in a time frame sooner than he could have done so. January 20, 2000, Mr. Anderson sent the invention disclosure

for the instant invention to Peter Peterson of DeLio & Peterson LLC, New Haven, Connecticut for preparation. At the same time, Mr. Anderson assigned to Mr. Peterson the task of preparing applications for two other inventions made by them, IBM Docket Nos. FIS9-1999-0317 and FIS9-1999-0318. Anderson Declaration, ¶¶ 6, 7 and 8; Inventors' May 10, 2005 Declaration ¶ 10.

5. Between January 20 and March 23, 2000, the inventors had at least one telephone conference with Mr. Peterson regarding the instant invention. On March 23, 2000, Mr. Beatty faxed further details of the instant invention to Mr. Peterson. Inventors' May 10, 2005 Declaration ¶ 11.

6. During the week of April 24, 2000, the inventors met with Mr. Peterson at their offices to discuss the instant invention and their other two previously mentioned inventions. It was decided with Mr. Peterson that, in view of the interrelated subject matter, a single patent specification and set of drawings would be prepared that combined the instant invention and their other two inventions. Inventors' May 10, 2005 Declaration ¶ 12.

7. On May 5, 2000, the inventors received from Mr. Peterson a draft application that combined the instant invention and their other two inventions in a single specification and set of drawings, and included a separate set of claims for each of the three inventions. Inventors' May 10, 2005 Declaration ¶ 13.

8. Between May 5, 2000 and June 6, 2000, the inventors had further discussions with Mr. Peterson to review the instant application and suggest changes. Inventors' May 10, 2005 Declaration ¶ 14.

9. On June 6, 2000, Mr. Peterson sent the completed patent application on the instant invention to Mr. Anderson for execution by the inventors and filing with the U.S. Patent and Trademark Office ("PTO"). On or about that same date, Mr. Peterson sent the completed patent application on their other two inventions to Mr. Anderson for execution by the inventors and filing with the PTO. Inventors' May 10, 2005 Declaration ¶ 15.

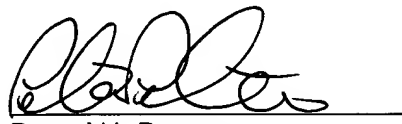
10. On June 20, 2000, the inventors executed the declaration for the instant application. On that same day, IBM filed with the PTO the instant application, serial no. 09/597,524, as well as the applications for their other two applications, serial nos. 09/597,523 and 09/597,525. Their other two applications have since been issued as U.S. Patent Nos. 6,832,378 and 6,507,903, respectively. Inventors' May 10, 2005 Declaration ¶ 16.

The entire period of time in issue, from September 29, 1999 to June 20, 2000 constituted nine (9) months. The continuous activity during this time by the inventors and the attorneys working on the instant patent application and the two closely related patent applications, all of which involved complex subject matter, clearly constitutes "due diligence" from a time just prior to the Sievert '376 patent reference date to the constructive reduction to practice of the invention at the time of filing with the USPTO. 37 CFR § 1.131.

Since the only reference cited against the instant application, the Sievert '376 patent, has been antedated by the enclosed declarations and supporting evidence under 37 CFR § 1.131 showing prior conception and reduction to practice, as well as due diligence,

it is respectfully submitted that the application has now been brought into a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,




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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date indicated below as first class mail in an envelope addressed to the Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 2231301450.

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